

**DRAFT WORK PLAN
EXPANDED SITE INSPECTION
PHOTOCIRCUITS CORPORATION
GLEN COVE, NEW YORK**

**PREPARED UNDER
TECHNICAL DIRECTIVE DOCUMENT NO. 02-8709-11
CONTRACT NO. 68-01-7346**

**FOR THE
ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY**

MARCH 29, 1988

**NUS CORPORATION
SUPERFUND DIVISION**

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1.0 INTRODUCTION AND OBJECTIVES

This section presents an introduction and defines project objectives for an Expanded Site Inspection (ESI) at the Photocircuits Division/Kollmorgen Corporation Site, located in Glen Cove, Long Island, New York.

The Hazard Ranking System (HRS) model is currently undergoing revision and testing and is not expected to be finalized until after this ESI is completed. The revised HRS (HRS-2) is available as a Proposed Rule (dated November 11, 1987). This ESI will attempt to fulfill the data requirements and the intent of the Proposed Rule. However, further modifications of the HRS model may necessitate that additional studies be done at a later date in order to score this site. The actual completion of an HRS-2 model is not within the scope of work of this ESI.

1.1 INTRODUCTION

The Photocircuits Division/Kollmorgen Company (Photocircuits) has been operating in Glen Cove, New York since the late 1950s. The company manufactures printed circuit boards for the electronics industry and their processes include metal plating, stripping, and etching. These processes not only produce hazardous waste, but require the use of hazardous substances as feedstock material.

The various types of waste produced on site pass through the company's own treatment plant before they are disposed of. Recent inspections of the facility have found storage and disposal methods at Photocircuits to be in compliance with the Resource Conservation and Recovery Act (RCRA). However, it was past disposal practices that attracted the attention of the Nassau County Health Department (NCHD). These practices included unauthorized discharges to Glen Cove Creek, which flows through the site property; the on-site storage of metal-laden sludge in an unlined lagoon; discharges to the Glen Cove Wastewater Treatment Plant that contained excessive levels of heavy metals; and the improper cleaning of empty drums, resulting in the injury of a city employee.

In 1977, three of Glen Cove's public supply wells, located on Carney Street, 1000 feet northeast and downgradient of Photocircuits, had to be closed due to organic contamination. The NCHD initiated an investigation to discover the source of contamination and concluded that Photocircuits was a possible responsible party. In 1987, NUS Corporation Region 2 FIT was tasked by the U.S. EPA Region 2 to conduct a site inspection at the facility. Information compiled while preparing for the

site inspection prompted the EPA to reevaluate the task assignment, and in 1988, NUS Corporation was tasked to conduct an Expanded Site Inspection (ESI) at Photocircuits. The following were considered in determining the necessity for an expanded inspection at the facility:

- Since the closing of the three Carney Street wells, the Glen Cove Water Department is barely able to meet its peak demand capacity, and cannot retain the 25 percent reserve capacity required. In addition, their Kelly Street well, located 3000 feet northeast and downgradient of Carney Street, is currently in danger of being closed due to similar contamination. There is no alternative source of water readily available.
- The aquifers underlying Long Island have been designated as sole source aquifers under the Safe Drinking Water Act. The City of Glen Cove depends on this source to supply water to over 25,000 people. Nineteen public supply wells, serving 115,000 people, have been identified within 3 miles of the site.
- Glen Cove Creek flows northwest into the Hempstead Harbor, located approximately 2.3 stream miles from the site. The harbor has been designated as a significant coastal fish and wildlife habitat and is considered one of the 10 most important water fowl wintering areas on the north shore of Long Island.

1.2 OBJECTIVES

The objectives of the ESI are to

- Collect data necessary for the accurate characterization of the site for eventual development of an HRS-2 score by
 1. characterization of on-site waste sources;
 2. identification of potential migratory pathways (groundwater, surface water, air, and on-site exposure);
 3. documentation of observed releases, if any, via the four migratory pathways.
- Provide all information in an organized package to facilitate eventual transfer of data to a remedial contractor.

Existing data relevant to the ESI are presented in this report. Information on the Photocircuits Site and surrounding region was collected through literature and file searches, and communications with representatives of Photocircuits. A site reconnaissance was conducted on March 31, 1987, enabling conditions existing on site at that time to be evaluated.

2.0 EXISTING DATA

This section provides a summary of general site information including the site location, description, history, and land use of the site and surrounding properties. Data were gathered from various sources including Nassau County Health Department files, topographic maps, aerial photography, and the NUS Corporation Region 2 FIT site reconnaissance.

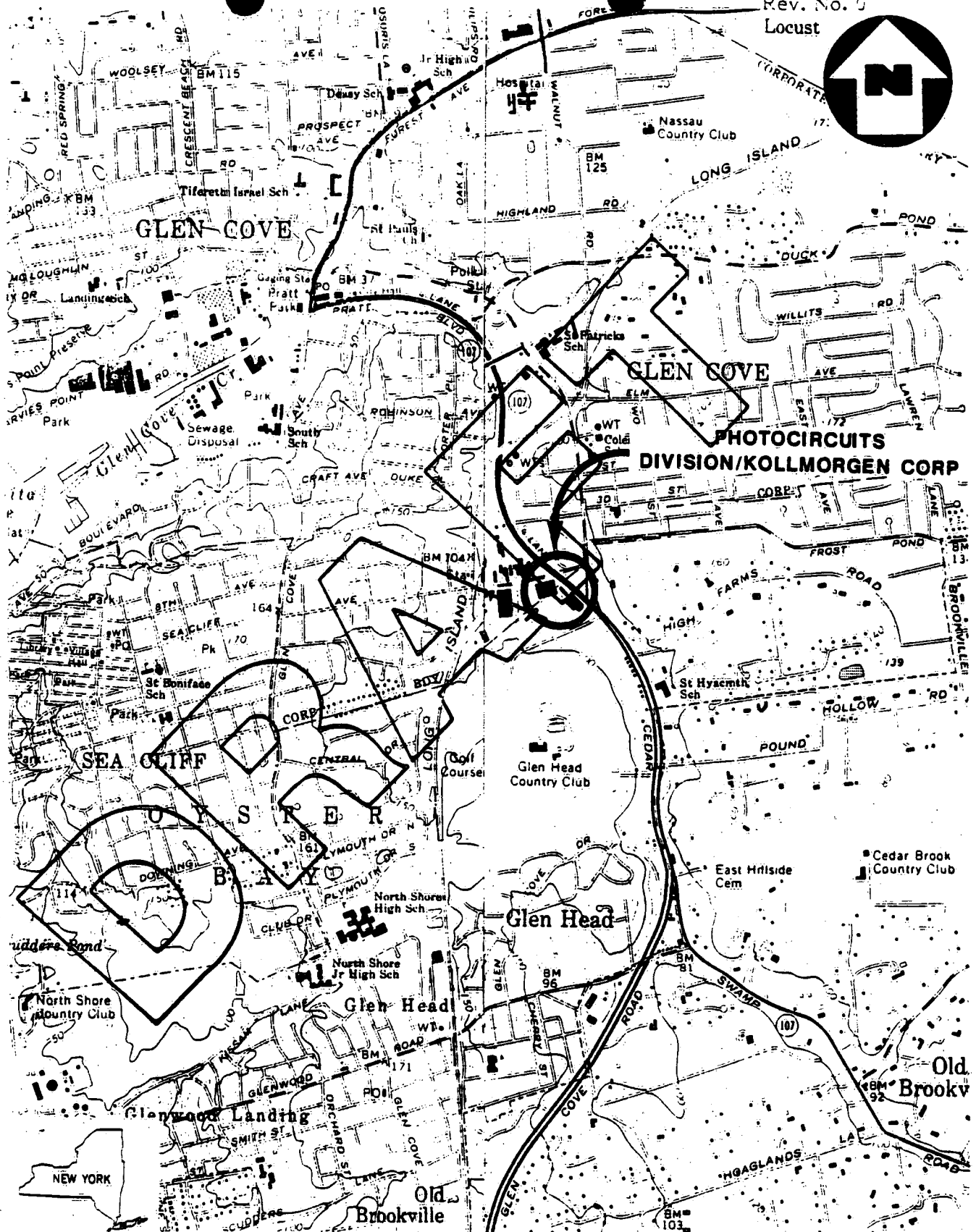
2.1 BACKGROUND DATA

2.1.1 Site Location and Description

Figures 2-1 and 2-2 are a site location map and a site map, respectively, for the Photocircuits Site. The Photocircuits Division/Kollmorgen Corporation Site is located in a small industrial park in Glen Cove, Nassau County, New York. It covers approximately 10.8 acres at a latitude of 45° 51' 06" N and longitude of 73° 37' 24" W. Two sides of the property are bordered by roadways: the north by Sea Cliff Avenue, and the east side by State Route 107. Slater Electric Company occupies the property immediately west of the site, and the Glen Head Country Club covers an extensive area to the south.

There are four buildings on site, two which are production facilities and two which house the waste treatment and maintenance operations. A portion of one of the buildings is designated as storage space, and is augmented by a small storage shed located next to it. Various containers of feedstock material are kept on a bermed, concrete pad between two of the buildings. Containers of waste material are also stored here temporarily, prior to their removal for off-site disposal. There are two production wells, each with a pump house, and three diffusion wells on site.

Most of the property's surface is paved over and a majority of this is designated as parking areas. Glen Cove Creek, sometimes referred to as Cedar Swamp Creek, flows through the western half of the site property in a northerly direction. The creek separates the three larger buildings on site from the fourth, but their respective parking areas are adjoined by a car bridge and a smaller pedestrian bridge. There is a narrow grass-covered strip of land on either side of the creek with a few trees scattered along its length. The only other vegetated areas are along the north and east edges of the property, parallel to the bordering roadways.



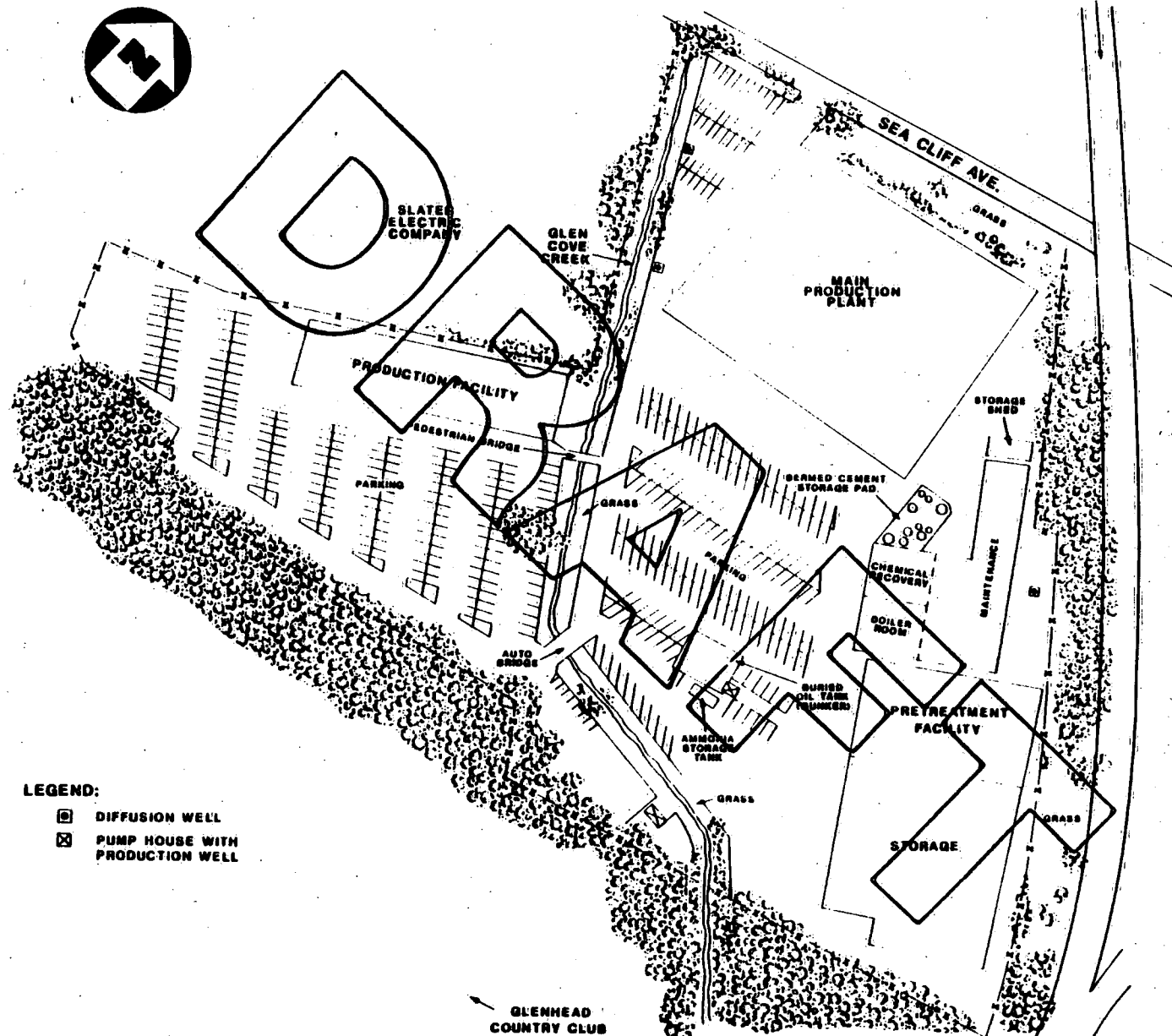
(QUAD) HICKSVILLE, N.Y.

SITE LOCATION MAP
PHOTOCIRCUITS DIVISION/KOLLMORGEN CORP.,
GLEN COVE, N.Y.

SCALE: 1"=2000'

FIGURE 2-1





2-3

SITE MAP

PHOTOCIRCUITS DIVISION/KOLLMORGEN CORP., GLEN COVE, N.Y.

(NOT TO SCALE)

FIGURE 1-2



R-554-03-22-01
Rev. No. 0

2.1.2 Site History

The Photocircuits Division/Kollmorgen Company, hereafter referred to as "Photocircuits", is an active facility that produces printed circuit boards for the electronics industry. It has been operating at this location since the late 1950s and utilizes several processes on site, including metal plating, stripping, and etching as well as solvent and metal recovery systems. Table 2-1 depicts a concise historical chronology of the Photocircuits Division/Kollmorgen Company and is located at the end of this subsection. Photocircuits first came to the attention of the Nassau County Health Department (NCHD) on March 20, 1964, when they received a complaint of dark blue discoloration in Glen Cove Creek. An NCHD inspector contacted Photocircuits on this matter and was told by the plant engineer that a leak had occurred in their metal recovery treatment tank. The leak resulted in the accidental discharge of untreated waste to a storm drain which empties into the creek. The blue color was due to the high concentration of copper present in the waste (NCHD, 1964).

On April 22, 1964, the NCHD inspector returned to the site and observed blue liquid entering the creek from the storm drain. A representative of Photocircuits called the NCHD the following morning and stated that partially treated copper waste had been discharged from a tank into the creek. Analysis by Photocircuits revealed that the waste contained 100 ppm of copper (NCHD, 1964).

In December 1974, the Executive Committee of Photocircuits issued an internal memorandum regarding some of the disposal methods utilized by the company. It acknowledged that unauthorized discharges to Glen Cove Creek had occurred through a parking lot storm drain. The memorandum, a copy of which was sent to the NCHD, went on to explain that any such occurrences in the future would be grounds for immediate dismissal.

In 1977, three of the City of Glen Cove's ten potable supply wells were closed due to trichloroethylene (TCE) and tetrachloroethylene contamination. These three wells constitute the Carney Street well field and are located approximately 1000 feet northeast of Photocircuits. That same year, the NCHD initiated an investigation to discover the source of the contamination. Ten samples were collected from various locations in the Carney Street vicinity, including waste discharges, drains, groundwater, and surface water from Glen Cove Creek. The NCHD concluded that the contamination of the Carney Street well field was due to past waste discharges occurring as recently as five or ten years ago and that these discharges originated in the industrial park within which Photocircuits is located. It was also noted that only two industries in the area, Slater Electric Company and Photocircuits, use solvents of the general type found in the well (NCHD, 1977).

On November 15, 1984, city workers collected what were supposed to be clean, empty plastic drums from Photocircuits to be reused as refuse containers. While cutting the top off of one of the drums, a worker received burns from liquid remaining inside. The label on the drum indicated it had been used to hold fluoboric acid. As a result of this incident, the Director of Public Works requested an investigation to discover the extent of the problem and suggested that, if necessary, the drums should be tested prior to their acceptance by the city (NCHD, 1984).

From January 17, 1986 through February 26, 1986, discharge to the Glen Cove Wastewater Treatment Plant exceeded the copper standard on eight different occasions. As a result, the treatment plant violated its SPDES permit five times within that same time frame (Department of Public Works, Glen Cove, 1986). In March 1986, the Director of Public Works sent a letter to Photocircuits pointing out this situation and reminding them that a written report must be submitted to the city within five days of an accidental discharge. The Director added that since Photocircuits was notified of this requirement prior to the February discharges, the letter served as a Notice of Violation, and the company was subjected to a \$1,000 fine for each violation in February.

On June 30, 1986, inspectors from the NCHD visited Photocircuits following a complaint of illegal discharge at the facility. While on site, they noted a 4-inch pipe discharging into Glen Cove Creek. After speaking with representatives of Photocircuits, it was determined that the discharge was non-contact cooling water from the air conditioning system. A consultant for the company stated that they were aware that the discharge was illegal, but their regular system of diffusion wells was inoperable at the time. The NCHD contacted the New York State Department of Environmental Conservation (NYSDEC) and discovered that Photocircuits had permits for the wells, but that these permits were also being violated. Further investigation of this problem was left up to the NYSDEC (NCHD, 1986).

In October, 1986, the U.S. Environmental Protection Agency (U.S. EPA) generated a preliminary report assessing the hazards at Photocircuits and their potential to affect the population and environment. Utilizing available background information, the report concluded that further investigation of the site was necessary. On March 16, 1987, NUS Corporation Region 2 FIT (NUS FIT 2) was tasked by the U.S. EPA Region 2 to conduct a site inspection at the facility. NUS attempted to carry out this task in April, 1987, but difficulties acquiring access to the property prevented the inspection from taking place. A site reconnaissance was conducted on March 31, 1987, enabling NUS FIT 2 to assess the conditions existing on site at that time. Information compiled while preparing for the site inspection prompted the EPA to reevaluate the task assignment, and on February 3, 1988, NUS Corporation was tasked to conduct an Expanded Site Inspection (ESI) at Photocircuits.

**HISTORY OF THE PHOTOCIRCUITS DIVISION/KOLLMORGEN SITE AND
CHRONOLOGY OF RESPONSE ACTIONS**

4/01/56 Photocircuits began operations. Date taken from RCRA Hazardous Waste Permit Application.

5/01/63 Work is started on the site for 155-foot deep well to be used for cooling purposes.

5/19/63 Work is completed on the 155-foot deep well.

3/20/64 A leak occurred in the waste treatment tank at Photocircuits, discharging untreated waste to a parking lot storm drain. The storm drain leads to Glen Cove Creek, and caused a dark blue discoloration in the creek.

3/21-22/64 The waste treatment tank undergoes repairs.

3/23/64 The waste treatment tank is back in operation. Samples were collected by the Nassau County Health Department (NCHD) from the weir, the pond, and storm drain on Sea Cliff Avenue. The results indicated the presence of heavy metals and solvents. The NCHD notified Photocircuits Corporation to contact them immediately should another discharge occur. A discussion was held regarding the stoppage of operation should the problem recur.

4/22/64 An inspection of the creek by NCHD revealed blue liquid emanating from the storm drain. A sample was collected from the weir at Photocircuits Corporation.

4/23/64 The NCHD received a call from Photocircuits Corporation stating a partially treated tank of copper waste was discharged into the creek causing the blue coloration. A copper reading taken by Photocircuits Corporation revealed copper concentrations of 100 ppm.

12/15/69 Work is started on site for the second 155-foot deep well to be used for cooling purposes.

01/29/70 Work is completed on the second 155-foot deep well.

**HISTORY OF THE PHOTOCIRCUITS DIVISION/KOLLMORGEN SITE AND
CHRONOLOGY OF RESPONSE ACTIONS**

12/09/74 Photocircuits Corporation circulates an internal memorandum stating company policy for discharge of any material to unauthorized facilities.

7/77 The Carney Street well field in Glen Cove is closed.

8/31/77 A status report of the investigation of organic contamination at the Carney Street well field is prepared by the NCHD. The interim conclusion indicates Photocircuits as a potential responsible party. Sampling results show the presence of solvents.

12/21/78 A New York State Department of Environmental Conservation (NYSDEC), Septic Tank Cleaner and Industrial Waste Collector Certificate of Registration is issued to the Kollmorgen Corporation, Reg. No. A1-001, expiration date, 3/31/79.

12/27/79 A NYDEC, Septic Tank Cleaner and Industrial Waste Collector Certificate of Registration is issued to the Kollmorgen Corporation Reg. No. A1-011, expiration date, 12/31/80.

8/13/80 A RCRA 3001 permit is received by Photocircuits.

1/16/81 A NYDEC, Septic Tank Cleaner and Industrial Waste Collector Certificate of Registration is issued to Photocircuits Corporation, Reg. No. A1-001, expiration date, 12/31/81.

5/15/81 A RCRA inspection of Photocircuits Corporation is conducted by the NYDEC, RCRA I.D. No. NYD096920483.

1/07/83 A RCRA inspection of Photocircuits corporation is conducted by the NYDEC, RCRA I.D. No. NYD096920483.

TABLE 2-1 (Cont'd)

HISTORY OF THE PHOTOCIRCUITS DIVISION/KOLLMORGEN SITE AND CHRONOLOGY OF RESPONSE ACTIONS

11/15/84 While collecting what were supposed to be empty, clean drums from Photocircuits, a city worker is burned by liquid remaining inside one of them. This prompted the Director of Public Works in Glen Cove, to file a Hazardous Materials Complaint against Photocircuits.

1/15/85 17.7 tons of wastewater treatment sludge from electroplating operations were shipped to WRC Processing, Pottsville, Pa, under Permit No. PA 089 "For Reclamation".

12/11/85 An inspection of Photocircuits Corporation is conducted by the NYSDEC under the New York State Industrial Hazardous Waste Management Act.

1/17/86 Photocircuits discharge to the Glen Cove wastewater treatment plant exceeds the
1/20/86 copper standard on each of these dates, violating their SPDES permit number
1/21/86 0028620.
1/22/86
1/28/86
1/30/86
2/18/86
2/26/86

1/20/86 As a direct result of the Photocircuits' violations, the Glen Cove wastewater treat-
1/29/86 ment plant violates its SPDES permit five times during the same time frame.
2/05/86
2/11/86
2/13/86

3/24/86 The Director of Public Works in Glen Cove, sends a letter to Photocircuits pointing out the fact that the Glen Cove wastewater treatment plant violated its SPDES permit because of Photocircuits' negligence. The letter also serves as a Notice of Violation and subjects Photocircuits to a \$1,000 fine for each violation in February.

TABLE 2-1 (Cont'd)

HISTORY OF THE PHOTOCIRCUITS DIVISION/KOLLMORGEN SITE AND CHRONOLOGY OF RESPONSE ACTIONS

- 5/30/86 A permit is issued to Photocircuits Corporation authorizing the discharge of industrial waste water to the City of Glen Cove sewer system in compliance with Chapter 46 of Municipal Code. The application filed on 4/16/86, and the permit, No. GCI, expires on 5/30/89.
- Summer 1986 The Kollmorgen Corporation sells its interest in Photocircuits Division.
- 6/30/86 An inspection of Photocircuits property is conducted by Mr. Welsh of the NCHD in response to a complaint from the Water Pollution Section regarding an alleged illegal discharge by Photocircuits. The discharge was noncontact cooling water from the air conditioning circuit. Photocircuits was notified that this was an illegal discharge.
- 7/1/86 The Consulting Engineer to Photocircuits, is informed of the illegal discharge. He states that he is aware the discharge was illegal and is in the process of remediating the situation.
- 7/14/86 The NYSDEC is made aware of the illegal air conditioning discharge caused by a problem with Photocircuits' diffusion wells. The NCHD turns the issue over to the NYSDEC.
- 10/01/86 A Potential Hazardous Waste Site Preliminary Assessment of Photocircuits is prepared by the U.S. Environmental Protection Agency. The site is assigned a medium priority for further assessment.
- 3/16/87 NUS Corporation requests access to Photocircuits to perform a Site Inspection. Photocircuits requests rescheduling the Site Inspection for April 6, 1987 due to the absence of their key technical personnel. NUS Corporation agrees to April 6, 1987, and a site reconnaissance is scheduled for March 31, 1987.

TABLE 2-1 (Cont'd)

**HISTORY OF THE PHOTOCIRCUITS DIVISION/KOLLMORGEN SITE AND
CHRONOLOGY OF RESPONSE ACTIONS**

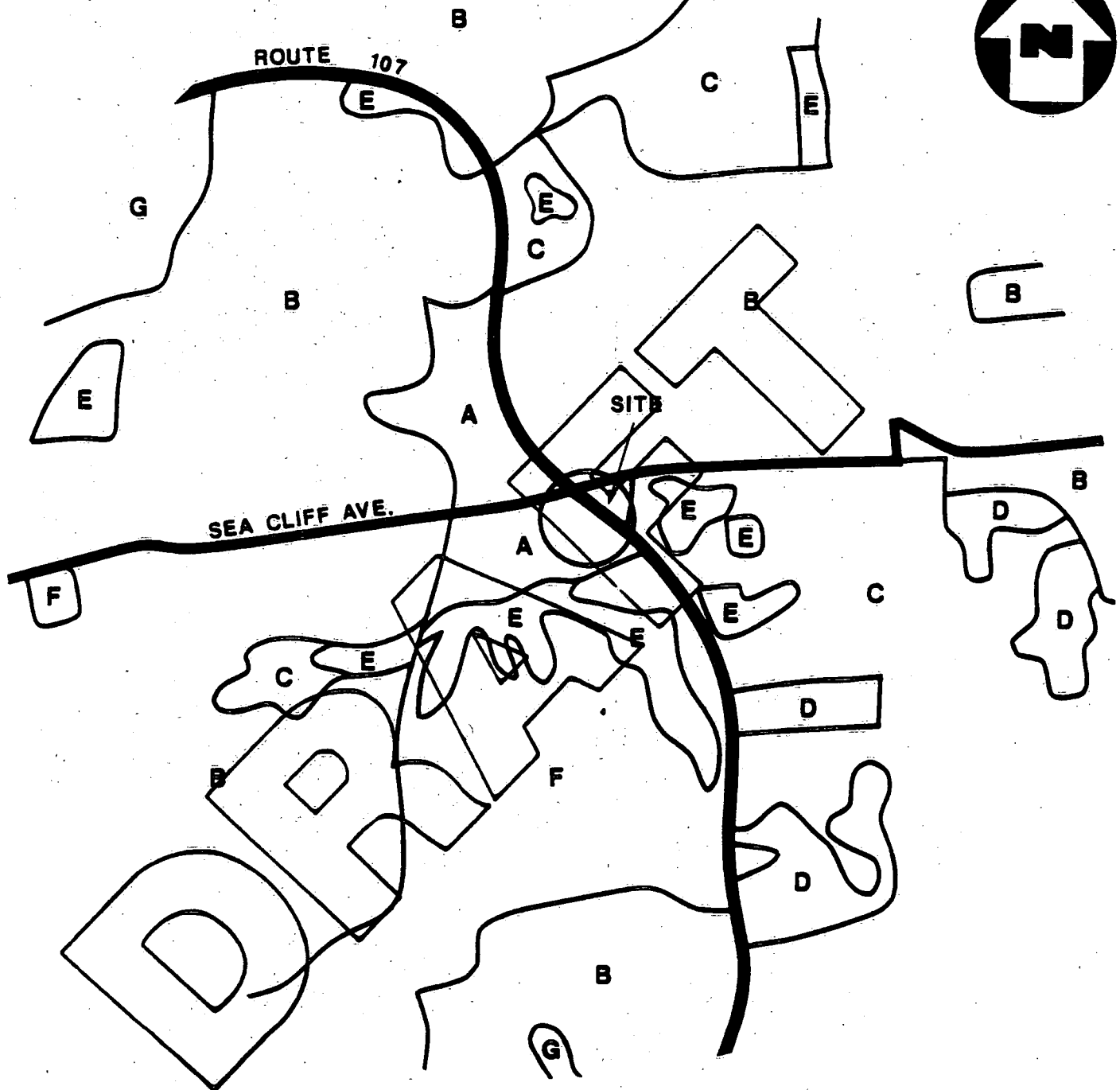
- 3/31/87 NUS Corporation conducts an on-site reconnaissance of Photocircuits' property.
- 11/17/87 NUS Corporation and Photocircuits do not reach an acceptable access agreement and the site inspection is not conducted. The Photocircuits Site is proposed as an Expanded Site Inspection (ESI). Sampling at the site will not be conducted until the ESI/SI status has been determined.
- 2/3/88 NUS Corporation is tasked by U.S. EPA Region 2 to conduct an ESI at the Photocircuits facility.

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2.1.3 Land Use

Figure 2-3 depicts land use patterns within 1 mile of the Photocircuits Site. The facility is located in a small industrial park, approximately 1.5 miles due east of Hempstead Harbor, near the center of the City of Glen Cove. The majority of the land surrounding the industrial park is densely populated, urban property, with the exception of that directly south and southeast. This area is occupied by the Glen Head Country Club and additional residential properties, although these are relatively rural, wooded, and sparsely populated. Similar rural residential communities are found east of the city and along Long Island's north shore. The only other industrial property in the vicinity is located just over 1 mile west of the site, where Glen Cove Creek enters the harbor. There are several parks, country clubs, and small unpopulated woodlands for the recreational needs of the approximately 14,190 residents living within 1 mile of Photocircuits. In addition, within a 2-, 3-, and 4-mile radius of the site there are 34,761 residents, 48,764 residents, and 71,848 residents, respectively. These populations greatly increase during the summer months.

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LAND USE CLASSIFICATIONS:

A - INDUSTRIAL
B - URBAN-DENSE POPULATION
C - URBAN-SPARSE POPULATION
D - WOODED-SPARSE POPULATION

E - WOODED-UNPOPULATED
F - PARK LAND
G - WATER

LAND USE PATTERNS
PHOTOCIRCUITS DIVISION/KOLLMORGEN CORP.,
GLEN COVE, N.Y.

(NOT TO SCALE)
2-12

2.2 ENVIRONMENTAL DATA

2.2.1 Climate

The climate of Long Island is humid continental. It is dominated by air masses and weather systems originating primarily from the North American land mass, but can also be significantly affected by the Atlantic Ocean. The prevailing wind direction is generally west to east. Southwesterly winds become prevalent during the warmer months, while a northwest component is evident during the colder half of the year.

Table 2-2 presents average monthly temperature and precipitation data for Mineola, New York. Data from this weather station, located approximately 9 miles southwest of Glen Cove, are representative of the Photocircuits Site. The data presented in Table 2-2 are based on records of the 30-year period 1951-1980, inclusive. Mean monthly temperature ranges from 82.8°F in July to 37.3°F in January. Record high temperatures of greater than 100°F have occurred in Mineola in June, July, and August, while record lows of 2°F or lower have occurred in January and February during this period.

The average annual total precipitation in Mineola is 43.65 inches, with March (4.44 inches) the wettest month, and June (2.93 inches) the driest. Precipitation is generally evenly distributed throughout the year. Most of the precipitation is derived from regional storms during the winter, whereas in the summer the majority of the precipitation is associated with local thunderstorms.

TABLE 2-2

AVERAGE MONTHLY TEMPERATURE AND PRECIPITATION

Mineola, New York
(1951 - 1980)

| Month | Temperature | | | Precipitation |
|-----------------|-----------------------------|-----------------------------|------------------|---------------|
| | Average daily maximum | Average daily minimum | Average daily | Average |
| | °F | °F | °F | In. |
| January | 37.3 | 25.5 | 31.4 | 3.31 |
| February | 38.7 | 26.1 | 32.4 | 3.37 |
| March | 46.4 | 33.1 | 39.8 | 4.44 |
| April | 58.0 | 41.8 | 49.9 | 4.01 |
| May | 68.3 | 51.2 | 59.8 | 3.46 |
| June | 77.5 | 60.5 | 69.0 | 2.93 |
| July | 82.8 | 66.4 | 74.6 | 3.17 |
| August | 81.5 | 65.5 | 73.5 | 4.06 |
| September | 74.2 | 58.7 | 66.5 | 3.63 |
| October | 63.7 | 48.5 | 56.1 | 3.38 |
| November | 52.3 | 39.8 | 46.1 | 3.97 |
| December | 41.4 | 29.8 | 35.6 | 3.92 |
| Yearly: | | | | |
| Average | 60.2 | 45.6 | 52.9 | --- |
| Total | --- | --- | --- | 43.65 |

Source: Soil Survey of Nassau County, New York, February 1987.

2.2.2 Topography and Drainage

The Photocircuits Site is approximately 80 feet above mean sea level (MSL), with a site slope of less than 1 percent in a northwesterly direction. The surrounding topography is relatively flat to gently sloping to the northwest. The nearest significant increase in elevation occurs approximately 3800 feet northeast of the site at 170 feet above MSL. Glen Cove Creek flows northward through the site and empties into Hempstead Harbor, located approximately 2.3 stream miles away. Hempstead Harbor is classified as a significant coastal zone under the New York State Coastal Zone Management Program.

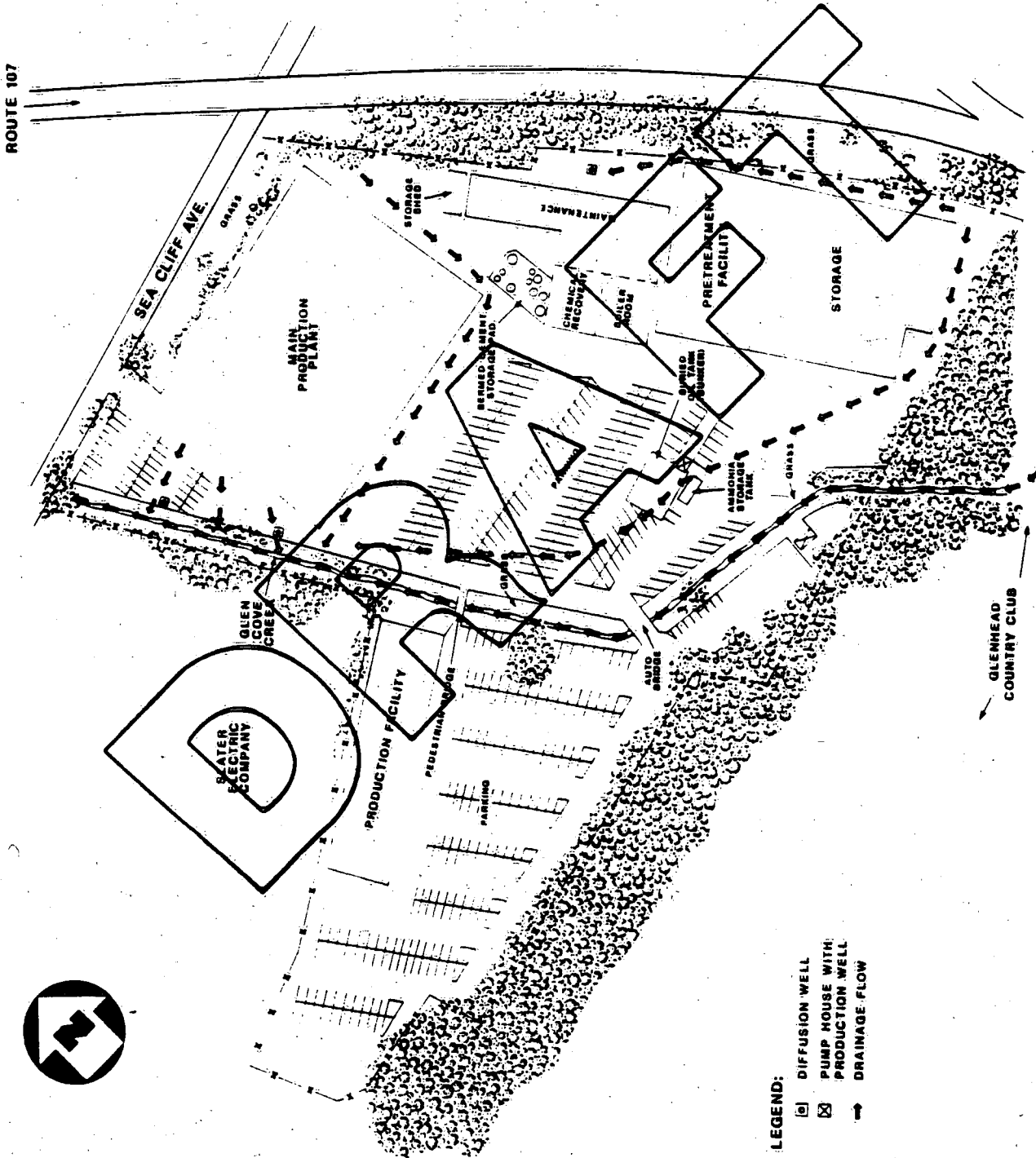
Surface drainage (Figure 2-4) on site generally flows northwest across the paved portions of the site. However, in the northeast portion of the site, surface drainage flows south for a short distance before turning back to the west toward the creek. Subsurface storm drains under the parking lot channel runoff to Glen Cove Creek.

2.2.3 Soils

Figure 2-5 presents a soils map derived from the U.S. Department of Agriculture soil survey maps for Nassau County, New York (USDA, 1987). The majority of the site property is covered by Urban Land, although there are three other soil types in the vicinity. The southwest corner of the site is partially comprised of Riverhead sandy loam, while a small portion of the southeast corner is made up of the Urban Land Riverhead Complex. The area near Glen Cove Creek consists of rarely flooded soils known as Udifluvents.

The term Urban Land describes areas where at least 85 percent of the surface is covered with asphalt, concrete, or other impervious building material. Most such surfaces are nearly level or gently sloping, and are located adjacent to main thoroughfares. The remaining 15 percent of the Urban Land consists of small grassy areas, such as lawns, that are for the most part well drained. However, in the event of severe rainstorms, rapid runoff cannot be adequately discharged to safe outlets, and urban flooding occurs.

The Riverhead Sandy Loam is very deep, gently sloping, and well drained soil. In general, Riverhead soils consist of sandy loam that ranges from yellow to brown in color, and extends to a depth of approximately 60 inches. From 0 to 35 inches permeability is moderately high, and increases to



SURFACE DRAINAGE PATTERNS
PHOTOCIRCUITS DIVISION/KOLLMORGEN CORP., GLEN COVE, N.Y.
(NOT TO SCALE)

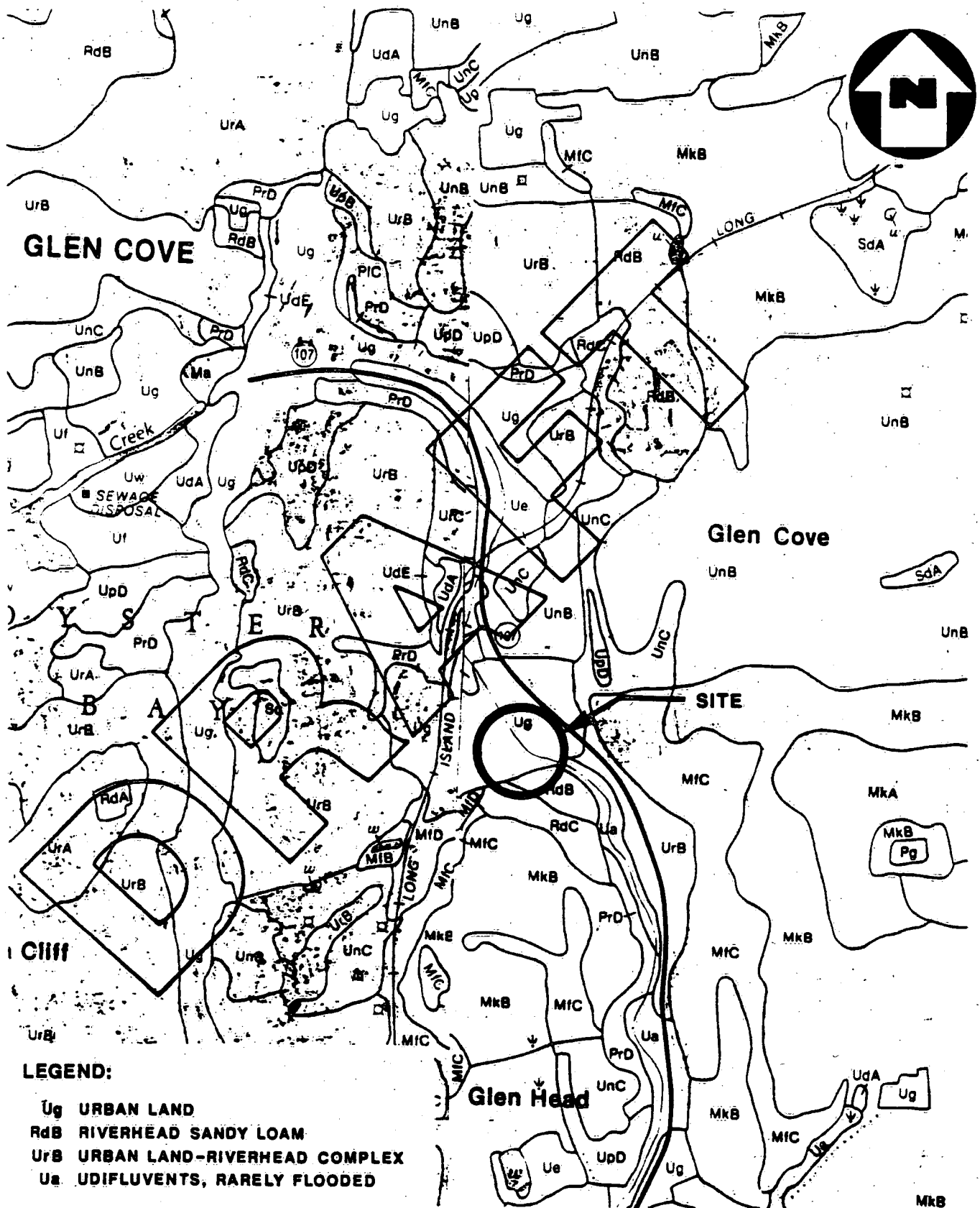


FIGURE 2-5

SOILS MAP

PHOTOCIRCUITS, GLEN COVE, N.Y.

SCALE: 1" = 1500' 2-17



very high throughout the lower 25 inches. Slope ranges from 3 to 8 percent, and both surface runoff and erosion hazard are slight. This soil type ranges from strongly acidic to very strongly acidic throughout.

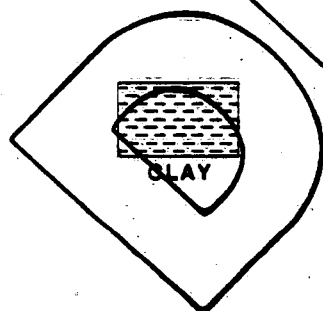
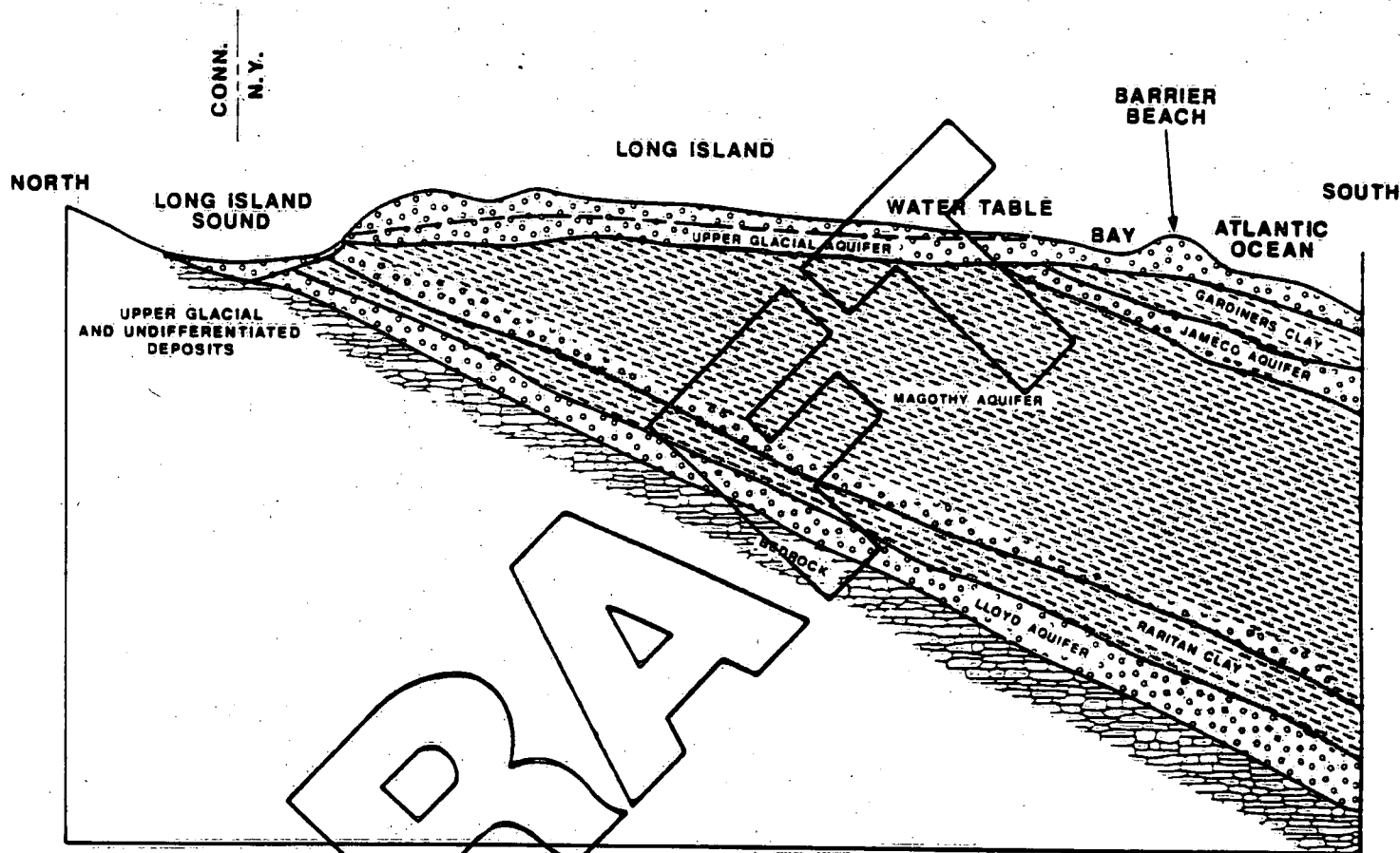
The Udifluvents consist of very deep, well drained soils and are located on flood plains situated along larger drainage channels. Most of these channels drain toward the north shore of Long Island, and subsequently, into Long Island Sound. Udifluvents are generally near or adjacent to Enfield, Montauk or Riverhead soils, all of which are at higher elevations. Slope ranges from 0 to 3 percent.

Generally, Udifluvents consist of a layer of dark brown silty loam that extends from 0 to 14 inches, yellowish-brown sandy loam from 14 to 26 inches and pale brown sand and gravel from 26 inches to a depth of 5 feet or more. Permeability is moderately high from 0 to 26 inches, below which it increases to very high. Runoff is very slow and soil reactivity is strongly acidic to very strongly acidic throughout.

2.2.4 Hydrogeology

On June 12, 1978, the aquifers underlying Long Island were designated as sole source aquifers under the 1974 Safe Drinking Water Act. The Photocircuits Site is located in northern Nassau County, just north of the Harbor Hill and Ronkonkoma Moraines. The area is considered a segment of the Atlantic Coastal Plain physiographic province. Figure 2-6 presents a general cross section of the geologic units on Long Island. The coastal plain consists of unconsolidated deposits of sand, gravel, and clay that dip to the south and thicken toward the Atlantic Ocean. The two terminal moraines south of the site are composed of boulders, gravel, sand, and clay, and were deposited during the Pleistocene Epoch. The Harbor Hill and Ronkonkoma Terminal Moraines are natural groundwater divides along Long Island. North of these moraines, in the area of the site, groundwater flows north toward Long Island Sound.


Three water bearing units or aquifers have been identified in the vicinity of the site. They are the Upper Pleistocene deposits (otherwise known as the Upper Glacial Aquifer), the Magothy Aquifer, and the Lloyd Aquifer. The Upper Glacial Aquifer has a maximum thickness of 600 feet and is composed of poorly permeable till containing boulders, gravel, sand, and clay. In the area of the site, the top of the Upper Glacial Aquifer is approximately 150 feet below MSL and is overlain by soil and surficial deposits. The Magothy Formation, the primary source of drinking water in the area,




SANDY CLAY, CLAYEY SAND
AND SILT


GRAVEL


SAND


CONSOLIDATED
ROCK

**CROSS-SECTION OF THE GEOLOGIC
FEATURES OF LONG ISLAND
PHOTOCIRCUITS, GLEN COVE, N.Y.**

(NOT TO SCALE) 2-19

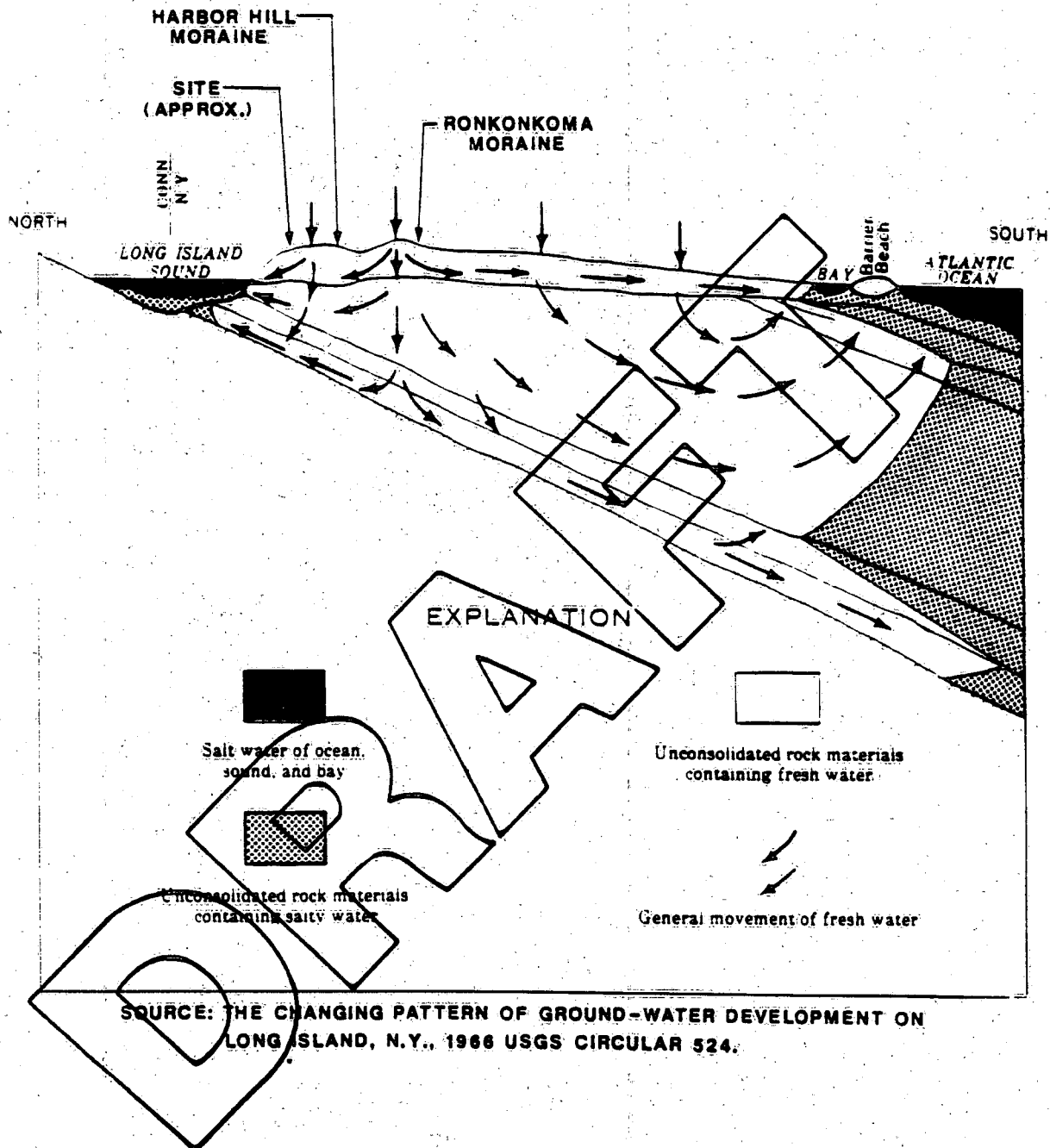
FIGURE 2-6

 **NUS**
CORPORATION

reaches a maximum thickness of approximately 1100 feet. It is composed of fine to medium grain sand interbedded with lenses and layers of coarse sand, sandy clay, and solid clay. Gravel is common in the basal portion of the unit. The top of the Magothy Aquifer is at a depth of approximately 300 feet below MSL near the site, but within a 4-mile radius, there are areas where it may be only 100 feet below MSL. The Magothy is underlain by the Raritan Formation, which is subdivided into two members: The Raritan Clay and the Lloyd Sand, also known as the Lloyd Aquifer. The Raritan Clay has a maximum thickness of 300 feet, and is comprised primarily of clay and silty clay. It has few lenses and layers of sand, little gravel, and the permeability ranges from poor to very poor. The Raritan Clay overlies the Lloyd Aquifer, which has a maximum thickness of 500 feet, and is comprised of fine to coarse grain sand and gravel. This aquifer commonly has a clayey matrix and contains some layers and lenses of solid and silty clay. Permeability of the Lloyd ranges from poor to moderate, and the water is confined under artesian pressure by the overlying Raritan Clay. In the area of the site, the top of the Lloyd Aquifer is at an approximate depth of 350 feet below MSL.

Most municipal supply wells within a 4-mile radius of the site are installed into the Magothy Aquifer at depths ranging from 100 to 300 feet. At these depths, greater amounts of coarse gravels are present and higher yields are achieved. Many private wells are screened in the Upper Glacial Aquifer. Water level measurements and pump test data for the region indicate there is a hydraulic connection between the Magothy and Upper Glacial Aquifers. Hydraulically, the Raritan Clay is a leaky confining layer for the Lloyd Aquifer, retarding, but not preventing, vertical leakage of water to and from the Lloyd Aquifer. There are few wells in the Lloyd Aquifer at present, due not only to its greater depth, but to the fact that legal restrictions have been imposed on its use.

Figure 2-7 illustrates the flow of groundwater in the aquifers on Long Island. The Ronkonkoma Terminal Moraine acts as a divide for regional flow direction. Depth to groundwater at the site is approximately 8 to 10 feet below the ground surface, and north of the divide, flow is generally northward toward Long Island Sound. Regional groundwater flow direction and velocity in both the Upper Glacial and Magothy Aquifers may be greatly affected by heavy pumping from the numerous supply wells in the area. Groundwater is recharged in the area by precipitation, the use of recharge basins, and diffusion wells.



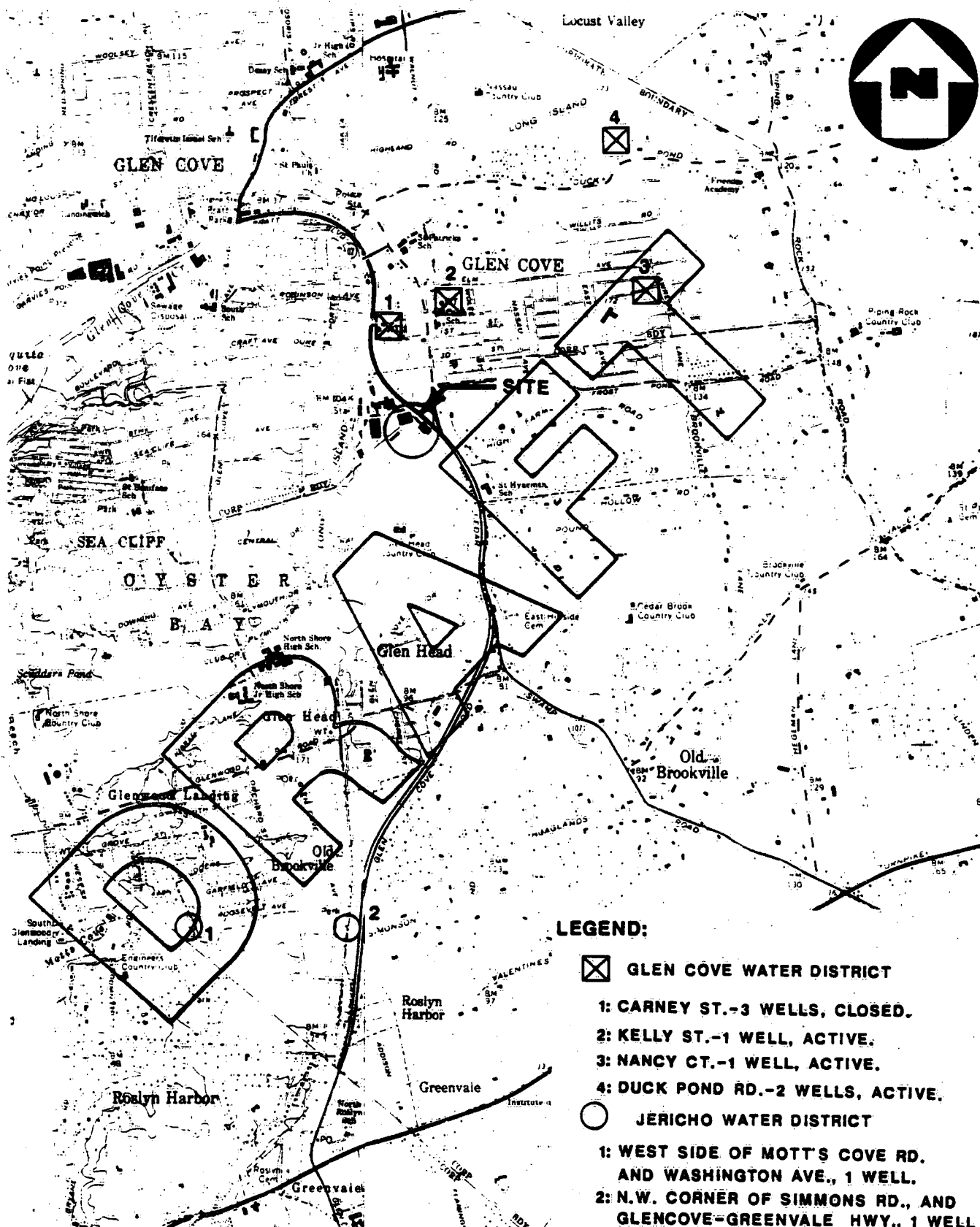
**GROUNDWATER MOVEMENT ON LONG ISLAND, N.Y.
UNDER NATURAL CONDITIONS
PHOTOCIRCUITS, GLEN COVE, N.Y.**

(NOT TO SCALE)

2-21

Figure 2-8 gives the locations of public supply wells in the immediate vicinity of the site. There are approximately 27,000 people serviced by wells in the City of Glen Cove and 64,000 people in the Jericho Water District. All public supply wells are interconnected between municipalities. The nearest public supply wells, a cluster of three, are located on Carney Street, approximately 1,000 feet northeast of the site. These wells have been closed since 1977 due to solvent contamination. The nearest active public supply well is located on Kelly Street, 2000 feet northeast of the Carney Street wells. Routine analysis by the NCHD has shown a steady increase of 1,1,1-trichloroethane in the well. The New York State Department of Health is in the process of lowering the public drinking water standard for 1,1,1-trichloroethane from 50 ppb to 5 ppb. Based on the levels detected in past analyses, it is anticipated that, under this new standard, the Kelly Street well may have to be closed.

DRAFT



(QUAD) HICKSVILLE, N.Y.

FIGURE 2-8

PUBLIC SUPPLY WELLS
PHOTOCIRCUITS, GLEN COVE, N.Y.



2.3 WASTE CHARACTERIZATION

2.3.1 Hazardous Waste Quantity

The total amount of hazardous waste at Photocircuits has not been determined, although additional information is expected to be revealed during the ESI. Historical data do provide some information as to the types and quantities of substances involved in the company's processes. Table 2-3 shows the amounts of chemicals and solvents purchased by Photocircuits in 1985 and their uses. Table 2-4 shows the components and total tank capacities of the various cleaning, etching, stripping, and bathing solutions used on site. Table 2-5 lists the feedstock materials stored outside on a bermed cement pad.

Resource Conservation and Recovery Act (RCRA) reports completed by the New York State Department of Environmental Conservation (NYSDEC) give an indication of the amount of waste found on site at any one time. A RCRA report written following a January 7, 1983 inspection at Photocircuits estimated the waste on site to be 14 tons of metallic sludge, 4000 gallons of spent plating bath rinse water, 550 gallons of still bottoms, and 1000 gallons of spent etchant solutions. However, hazardous waste shipping manifests state that as much as 4000 gallons of spent etchant solution have been collected from Photocircuits at one time, indicating that the amount of waste on site varies. Manifests also show that 20 containers of sludge at a time, equaling roughly 17 tons, are collected for disposal, but the frequency of these collections is not specified.

In addition to the waste produced on site, Photocircuits accepted 1,916,037 gallons of sodium sulfate brine solution per year from a related facility in Aquebogue, New York. The solution was pH adjusted and discharged to the Glen Cove wastewater treatment system. Available information does not specify how many years this waste was accepted by the Glen Cove facility, but this operation was discontinued in 1981.

An analysis of historical aerial photographs of Photocircuits was conducted by the U.S. EPA Environmental Monitoring Systems Laboratory (EMSL) in 1988. The study covers the period from 1963 to 1987, and shows that the number of drums, tanks, and other containers on site has varied greatly over the years. The most recent photograph was taken on July 15, 1987, and shows the presence of 18 vertical tanks, 8 horizontal tanks, 228 drums, a large open-topped vat-like container, and approximately 25 other containers on site. A pool of brown standing liquid near a storm drain in the parking lot and an oil storage bunker are also visible in the photograph.

TABLE 2-3

PHOTOCIRCUITS
FEEDSTOCK MATERIAL PURCHASED IN 1985

| CHEMICAL/SOLVENT | USE | QUANTITY PURCHASED |
|---------------------|----------------------------------------------|--------------------|
| HYDROCHLORIC ACID | Plating Bath Make Up | 12,400 Gallons |
| SULFURIC ACID | pH Adjustment Wastewater Treatment | 18,000 Gallons |
| PM ACETATE | Screen Cleaning | 13,110 Gallons |
| HYDROSULFIDE SODIUM | Wastewater Treatment | 23,500 Gallons |
| HYDROGEN PEROXIDE | Sulfuric Destruction Wastewater Treatment | 6,000 Gallons |
| CALCIUM CHLORIDE | Wastewater Treatment | Unknown |
| TRICHLOROETHANE 111 | Panel Development | 29,000 Gallons |
| FORMALDEHYDE | Plating Bath Make Up | 6,320 Gallons |
| ANHYDROUS AMMONIA | pH Adjustment in Etching Process | 26,000 Pounds |
| AMMONICAL ETCHANT | Copper Stripping | 221,650 Gallons |
| METHYLENE CHLORIDE | Dissolves Ink | 94,500 Gallons |
| CAUSTIC SODA | Wastewater Treatment | 73,500 Gallons |

TABLE 2-4
PHOTOCIRCUITS
BATHING, ETCHING, AND STRIPPING SOLUTIONS

| CHEMICAL PROCESS | COMPONENTS | TANK CAPACITY |
|-------------------------|--------------------------------------------------------------------------------|----------------|
| ACID COPPER BATH | Copper Sulfate Sulfuric Acid Hydrochloric Acid PC 667 Brightener | 1, 367 Gallons |
| SOLDER BATH | Stannous Fluoborate Lead Fluoborate Fluoboric Acid Baptone | 1, 367 Gallons |
| TIN BATH | Stannous Sulfate Sulfuric Acid Tin-Brite Makeup Tin-Brite Replenisher | 683.5 Gallons |
| NICKEL BATH | Nickel Sulfite Boric Acid Nickel Chloride | 1, 367 Gallons |
| ETCHING SOLUTION | Sodium Persulfite | 355 Gallons |
| RACK STRIPPING SOLUTION | Nitric Solution | 1, 367 Gallons |

TABLE 2-5
PHOTOCIRCUITS
OUTDOOR MATERIAL STORAGE-BERMED CEMENT PAD

| SUBSTANCE | TANK CAPACITY (GALLONS) |
|-----------------------|-------------------------|
| ACETATE | 2,000 |
| ACETATE | 2,000 |
| COPPER CHLORIDE | 5,000 |
| 1,1,1-TRICHLOROETHANE | 6,000 |
| DICHLOROMETHANE | 5,000 |
| HYDROCHLORIC ACID | 5,000 |
| HYDROCHLORIC ACID | 2,000 |
| COPPER BATH SOLUTION* | 8,000 |
| COPPER BATH SOLUTION | 8,000 |
| COPPER BATH SOLUTION | 4,000 |
| NUMBER 2 FUEL OIL | 20,000 |
| ANHYDROUS AMMONIA | 8,400 |
| HYDROGEN PEROXIDE | 8,000 |
| WATER | 10,000 |

* Refer to Table 2-3 for components.

- An inter-office memorandum was issued acknowledging unauthorized discharges to Glen Cove Creek via a parking lot storm drain.
- A Glen Cove city worker received acid burns while collecting what were supposed to be empty, clean, plastic drums from Photocircuits.
- The Glen Cove Wastewater Treatment Plant was in violation of its SPDES permit on five different occasions as a direct result of receiving discharge from Photocircuits at illegal concentrations.
- Local groundwater contamination has been documented, causing three public supply wells 1000 feet northeast of Photocircuits to be closed. The Nassau County Health Department investigated the matter and concluded it was due to waste discharge from the industrial park, and that only two industries in the area, Photocircuits and Slater Electric, use solvents of the type found in the wells.

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2.3.2 Waste Types, Treatment, and Disposal

Photocircuits utilizes several production methods on site, including metal plating, stripping and etching, image printing, plastic fabrication, and limited chemical formulation. To carry out these processes, potentially hazardous substances such as metals, acids, and solvents, are needed in large amounts, as described in Table 2-3. Much of the resulting waste is treated on site either for reclaiming purposes or to meet current discharge standards.

The primary waste treatment system includes a 4000-gallon flocculating tank, a 15,000-gallon main settling tank, a 7500-gallon sludge thickening and decanting tank, and approximately 1200 square feet of sludge drying and filter beds. All process wastes pass through this system, but cyanide rinses are first treated with calcium hypochlorite and sodium hydroxide. Additional treatment consists of solvent recovery via an on-site still and a three-stage lime treatment method that both neutralizes spent plating rinse waters and precipitates heavy metals. Solutions containing high levels of copper are kept in a 2000-gallon holding tank prior to preliminary treatment. These solutions may contain as much as 60,000 mg/L copper.

Following these treatment methods, there is still a considerable amount of waste remaining. Table 2-6 shows the waste types produced on site and the potentially affected migration pathways. Because there are many types of waste produced, Photocircuits must utilize several different disposal methods. Sludges are dewatered on a filter press and stored in plastic sacks while the still bottoms and spent solutions are placed in drums. These wastes, along with tanks of liquid feedstock materials, are stored temporarily on a bermed cement pad prior to their collection for off-site disposal. The cement pad drains directly into the Photocircuits treatment plant should any leakage occur.

Recent inspections by the New York State Department of Environmental Conservation have found the current storage and disposal methods practiced by Photocircuits to be in compliance with RCRA regulations. However, past disposal practices, as highlighted below, are of concern as possible sources of contamination to surface water and groundwater.

- Prior to the company's hook-up with the Glen Cove Wastewater Treatment Plant, plating rinse waters were discharged to Glen Cove Creek.
- Heavy metal sludges were stored in an unlined lagoon on site for unknown periods of time prior to off-site disposal.
- Highly concentrated copper waste was discharged to Glen Cove Creek when the treatment tanks malfunctioned.

TABLE 2-6
SUMMARY OF WASTE TYPES AND POTENTIAL MIGRATION PATHWAYS

| Hazardous Substance | Process Waste | Potentially Affected Migration Pathway: | | | | |
|------------------------|----------------------------------------------------------------------------|-----------------------------------------|---------------|----------|-----|------|
| | | Ground Water | Surface Water | Sediment | Air | Soil |
| CHROMIUM * | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| COPPER * | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| CYANIDE | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| IRON | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| LEAD * | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| NICKEL | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| ZINC * | Sludge, Spent Plating, Stripping, Bath Solutions | | X | X | | X |
| ACETATE | Spent Cleaning Solutions | | | | X | |
| AMMONIA | Spent Cleaning Solutions | | X | | X | |
| EPOXIES | Still Bottom Residue | | | | X | |
| METHACRYLATES | Still Bottom Residue | | | | X | |
| METHYLENE CHLORIDE | Spent Ink Dissolving Solution, Cleaning Solutions, Still Bottom Residue | X | | | X | |
| POLYVINYL-CHLORIDE | Still Bottom Residue | | | | X | |
| 1,1,1-TRICHLORO-ETHANE | Spent Panel Development Solution, Cleaning Solutions, Still Bottom Residue | X | | | X | |

* Substance is bioaccumulative.

2.3.3 Areas of Known or Suspected Contamination

The disposal methods utilized by Photocircuits may have had serious adverse effects on the environment. Local groundwater contamination has already been documented and may be attributable to the site. Other migration routes (surface water, sediments, soil, and air) may have also been affected by contaminants attributable to Photocircuits.

Groundwater

In 1977, three public supply wells, located 1000 feet northeast of Photocircuits, were closed due to trichloroethylene and tetrachloroethylene contamination. The NCHD investigated the matter and concluded that the contamination was due to discharges occurring as recently as 5 or 10 years ago, that originated in the industrial park. In their investigative report, the NCHD also noted that only two industries in the area, Slater Electric and Photocircuits, use solvents of the general type found in the supply wells.

The City of Glen Cove supplies drinking water to over 25,000 people. Without the Carney Street wells, the water department is just able to meet its peak demand capacity, but it is not capable of retaining the 25 percent reserve capacity required of public suppliers. Should one of the remaining wells become unuseable, no alternative supply is readily available, and the current peak demand would not be met. Such was the case in 1986, when one of the remaining wells was closed for repairs, and the city was forced to purchase water from neighboring suppliers. But other suppliers may no longer be willing to sell their water since the NYSDEC imposed caps on the amount of water each may withdraw from the groundwater sources.

The City of Glen Cove has noticed increasing levels of trichloroethylene in their Kelly Street supply well, located 2000 feet northeast and downgradient of the Carney Street wells. The water quality of this well, along with that of other Glen Cove public supply wells, is tested on a quarterly basis. As of March 1988, the levels of trichloroethylene have not exceeded the State standard of 50 ppb, but the New York State Department of Health is currently lowering the standard to 5 ppb. This new standard will become effective in June 1988, at which time the Kelly Street well will be retested. Members of the NCHD have stated that, based on past analyses, the well will not be able to meet the new State requirements. This could result in the closing of the Kelly Street well, further decreasing Glen Cove's supply, with no alternative service available.

Surface Water

Glen Cove Creek flows through the western half of the site and has been the recipient of unauthorized discharges from Photocircuits on at least two occasions. On March 20, 1974, a waste treatment tank malfunctioned, resulting in the discharge of untreated waste to a storm drain that empties into the creek. The waste, which contained high levels of copper, caused dark blue discoloration in the creek. On April 20, 1974, the treatment tanks malfunctioned again and, as before, partially treated waste was discharged to the creek. Analysis of the waste by Photocircuits revealed that it contained 100 mg/L of copper.

That spring and summer, the NCHD collected surface water samples from the creek and storm drains in the vicinity of Photocircuits. No contamination was detected upstream but high levels of copper and chromium were detected both at Photocircuits' property and downstream of the facility. One of the contaminated creek samples was collected directly opposite the Carney Street well field.

The high levels of copper and chromium discharged into Glen Cove Creek may have had immediate toxic effects on the aquatic life. This contamination may continue on a long-term basis as metals have a tendency to adhere to sediments. Contaminated sediment may migrate downstream, and both copper and chromium are bioaccumulative.

Glen Cove Creek flows northwest into Hempstead Harbor, which is located approximately 2.3 stream miles away. The harbor has been designated as a significant coastal fish and wildlife habitat and is considered one of the 10 most important water fowl wintering areas on the north shore of Long Island. It is not only noted for scaup, canvasback, and black ducks, but also provides a nursery and feeding habitat for striped bass, bluefish, Atlantic silverside, menhaden, winter flounder, and blackfish.

Air

A 1987 aerial photograph of the Photocircuits' property revealed the presence of 18 vertical tanks, 8 horizontal tanks, 228 drums, a large open vat-like container, and approximately 25 miscellaneous containers. The exact content of these containers is unknown, but it is known that much of the feedstocks stored and waste produced on site are both hazardous and volatile (refer to Tables 2-2, 2-3, and 2-5). During the NUS Corporation FIT 2 site reconnaissance, portions of the site property were screened utilizing an HNu photoionization detector and an organic vapor analyzer. Readings up to 5 ppm were detected in one of the drum storage areas.

Soil

The majority of the site property is paved over, and vegetated areas are restricted to narrow strips of land along Glen Cove Creek and the site borders. However, before the construction of its own treatment plant, Photocircuits stored metal-laden sludge on site in a lagoon. The sludge produced by Photocircuits contained high levels of copper, chromium, zinc, nickel, and cyanide, and was present on site in amounts of up to 17 tons at a time. It is possible that some of this material migrated from the lagoon and contaminated the surrounding soil. Such migration could cause further contamination to both Glen Cove Creek and local groundwater, as the water table is only 8 to 10 feet below the ground surface.

2.3.4 Existing Analytical Data

Environmental samples have been collected from the Photocircuits' vicinity on numerous occasions over the past 25 years. Historical data, representing the period from 1964 to 1986, are presented in Table 2-7 and indicate that the Nassau County Health Department is responsible for the collection of most of these samples. Table 2-8 summarizes the study of the industrial area conducted by the NCHD in June and July of 1977. This study was prompted by the contamination and subsequent closing of the Carney Street well field.

TABLE 2-7

DATA SUMMARY FROM PHOTOCIRCUITS' VICINITY: 1964-1986

| DATE | SAMPLE LOCATION | COLLECTED BY | ANALYSES |
|----------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------|
| 4/23/64 | Partially treated waste from Photocircuits' metal recovery tanks prior to its unauthorized discharge into Glen Cove Creek. | Photocircuits | Copper - 100 mg/L |
| 7/24/64 | From weir on Photocircuits' property that empties into parking lot storm drain and subsequently to Glen Cove Creek. | NCHD | pH - 11.93 Nickel - 1.5 mg/L |
| 8/15/64 | Glen Cove Creek opposite Carney Street well field. | NCHD | pH - 9.79 Copper - 240 mg/L Total Solids - 1,627 mg/L |
| 8/15/64 | From weir on Photocircuits' property. | NCHD | pH - 9.93 Copper (dissolved) - 576 mg/L Copper (total) - 640 mg/L Total Solids - 3,533 mg/L |
| 8/22/64 | Glen Cove Creek opposite Carney Street well field. | NCHD | Chromium - 16 mg/L |
| 1964 | Storm drain in Photocircuits' parking lot that empties into Glen Cove Creek. | NCHD | Chromium - 28 mg/L |
| 11/12/75 | Photocircuits' discharge to the Glen Cove Wastewater Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 31.80 mg/L Chromium - 0.42 mg/L Zinc - 2.10 mg/L Sulphate - 10,360 mg/L |
| 1/17/86 | Photocircuits' discharge to the Glen Cove Wastewater Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 4 mg/L |
| 1/20/86 | Photocircuits' discharge to the Glen Cove Wastewater Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 4 mg/L |
| 1/21/86 | Photocircuits' discharge to the Glen Cove Wastewater Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 3.3 mg/L |

TABLE 2-7 (Cont'd)

DATA SUMMARY FROM PHOTOCIRCUITS' VICINITY: 1964-1986

| DATE | SAMPLE LOCATION | COLLECTED BY | ANALYSES |
|---------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------|
| 1/22/86 | Photocircuits' discharge to the Glen Cove Waste-water Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 3.1 mg/L |
| 1/28/86 | Photocircuits' discharge to the Glen Cove Waste-water Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 6.5 mg/L |
| 1/30/86 | Photocircuits' discharge to the Glen Cove Waste-water Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 2.3 mg/L |
| 2/18/86 | Photocircuits' discharge to the Glen Cove Waste-water Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 9.0 mg/L |
| 2/26/86 | Photocircuits' discharge to the Glen Cove Waste-water Treatment Plant; collected from buried pipe on Photocircuits' property. | Glen Cove Department of Public Works | Copper - 9.0 mg/L |

TABLE 2-8

SAMPLING RESULTS OF GLEN COVE INDUSTRIAL AREA: 6/30/77-7/26/77

| Sample Location | Trichloroethylene | Tetrachloroethene | Dichloromethane | 1,1,1-Trichloroethane |
|----------------------------------------------------------------------------------|-------------------|-------------------|-----------------|-----------------------|
| Photocircuits' discharge to the Glen Cove Wastewater Treatment Plant. | 2.1 ug/L | 3.0 ug/L | 480 ug/L | * |
| Photocircuits' parking lot storm drain emptying into Glen Cove Creek. | 30 ug/L | 23 ug/L | N.D. | * |
| Glen Head Country Club storm drain emptying into Glen Cove Creek. | 25 ug/L | 77 ug/L | N.D. | * |
| Slater Electric Company's discharge to the Glen Cove Wastewater Treatment Plant. | 22 ug/L | 1240 ug/L | N.D. | * |
| Sewage from industrial area. | 4.7 ug/L | 43 ug/L | 440 ug/L | * |
| Groundwater from Carney Street Well No. 20. | 52 ug/L | 5.3 ug/L | N.D. | * |
| Pall Corporation air conditioning discharge. | 16 ug/L | 5.2 ug/L | N.D. | * |
| Keyco Motor Freight truck wash area. | N.D. | N.D. | N.D. | * |
| Glen Cove Creek at Glen Head Country Club | < 5 ug/L | < 2.5 ug/L | * | 5 ug/L |
| Glen Cove Creek at Carney Street | 115 ug/L | 12 ug/L | * | 6 ug/L |

* Not analyzed for this contaminant.

NUS Corporation FIT 2 background information filed under Technical Directive Document Number 02-8702-11, Edison, New Jersey.

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